

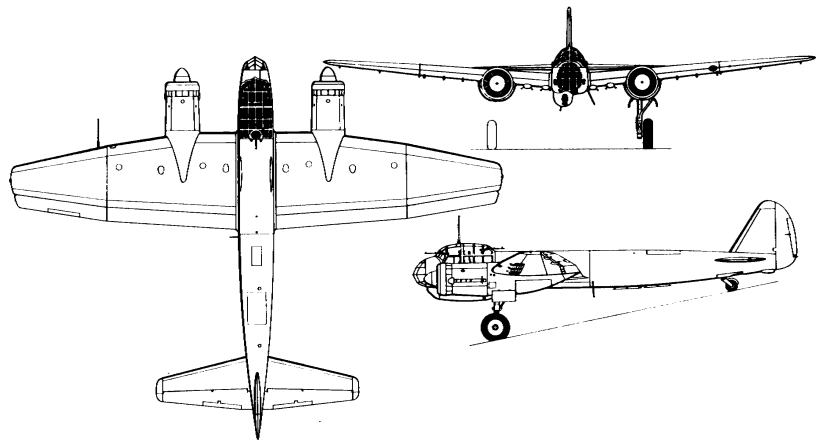
Junkers Ju88A-1

A/C Type: Medium Bomber
 Engine(s): 2x Jumo 211B-1 radial
 Eng. Pwr: 2400 hp, Air-cooled
 A/C Crew: Pilot, Bombadier, Flt Eng/Gunner
 Radio op/Gunner
 Maximum Speed: 280 mph at 18,050 ft.
 Maximum Ceiling: 26,200 / 23,500 / 16,800 ft.
 Defense factor: 6 Size Modifier: +1
 Damage Factor: 17/26 Endurance: 170
 Cockpit View: Fair Blind Area: Rear,Low
 Protection: Cockpit +1 Fuel +2 Engine +0
 Climb Dece/ Dive Accel: 2.0 / 1.0
 Weight and Load Limit: 5,300 / 15-30

Wpn Stations	Weight	Allowed Loads
2 (Fwd BB)	1540	14x SC 50 or 268-gal Aux FT
3 (Rear BB)	1540	14x SC 50 or 149-gal Aux FT
1,4	1102	1x 500 kg bomb

Country: Germany

Service Entry Date: Sept 1939



Class: MD

Victory Points: 8-17

AIRCRAFT PERFORMANCE CHART

Altitude		Minimum	Maximum	Maximum	Min	Min	Min	Min	Altitude		Average
Levels	Bands	Speed	Speed	Dive Spd	TT(4)	HT(5)	BT(-)	ET(-)	Levels	Bands	Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	3.0	5.0	8.5	4.5	6.0	--	--	25-30	HI	700
19-24	MH	3.0	5.5	8.5	4.0	5.5	--	--	19-24	MH	1,000
13-18	ML	2.5	5.5	9.0	3.5	4.5	--	--	13-18	ML	1,300
7-12	LO	2.5	5.0	8.0	3.0	4.0	--	--	7-12	LO	1,600
1-6	VL	2.0	4.5	7.0	3.0	3.5	--	--	1-6	VL	1,600

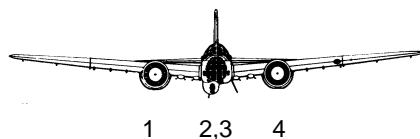
FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
FG	1x 7.92mm MG15 mg	10	4
DG	1x 7.92mm MG15 mg	10	4
VG	1x 7.92mm MG15 mg	10	4
GP	2x 7.92mm MG17 mg	8	4

GUN ATTACK FACTORS

Range	FG	DG	VG	Each GP
0	3	4	4	12
1	2	3	3	8
2	2	2	2	6
3	1	2	2	4
4	1	1	1	3
5	1	1	1	2
6	-	-	-	-
7	-	-	-	-

WEAPON STATION LOCATION



POWER VERSUS SPEED CHART

		per engine)				
Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1.0	0.5	--	--	HI
19-24	MH	1.5	0.5	--	--	MH
13-18	ML	2.0	1.0	--	--	ML
7-12	LO	2.5	1.0	--	--	LO
1-6	VL	2.5	1.0	--	--	VL
Banking FPs		2	3	4	6	
Side Slip FPs		2	4	7	7	

NOTES AND VARIANTS

Defensive Gun Arcs

FG: Front, level to high
 DG*: Rear +30, lvl to hi; 6:00 hi only
 VG*: Rear, low only
 * Radioman fires only 1 gun/turn.

Ju88A-1: Available Sep-39. First production version of the Ju88A with short wings. Fewer defensive guns, one less crew. Can divebomb; divebrakes - but if

overloaded or divespeed > 6.0, roll 1D10: 9 - brakes frozen open; 10 - brakes break off + wingspar critical hit. Few built. Ju88A-9 was trop/desert version.

Ju88A-13: Ground attack version based on A-1. Armored belly: all prot +1 from below; no divebrakes. May carry up to 8 gunpacks w/ twin 7.92mm MG15 mgs for ground attack only.

268-gal Aux FT:	Wgt: 1400 lb	Ld: 6.0/2.0	End: +95
149-gal Aux FT:	Wgt: 1000 lb	Ld: 4.0/1.5	End: +50

Junkers Ju88A-17

A/C Type: Medium torpedo bomber
 Engine(s): 2x Jumo 211J-1 12-cyl radial
 Eng. Pwr: 3360-3400 hp, air-cooled
 A/C Crew: Pilot, Bombadier, Radio-op/gunner

Maximum Speed: 348 mph at 18,700 ft.
 Maximum Ceiling: 31,200 / 24,100 / 19,500 ft.

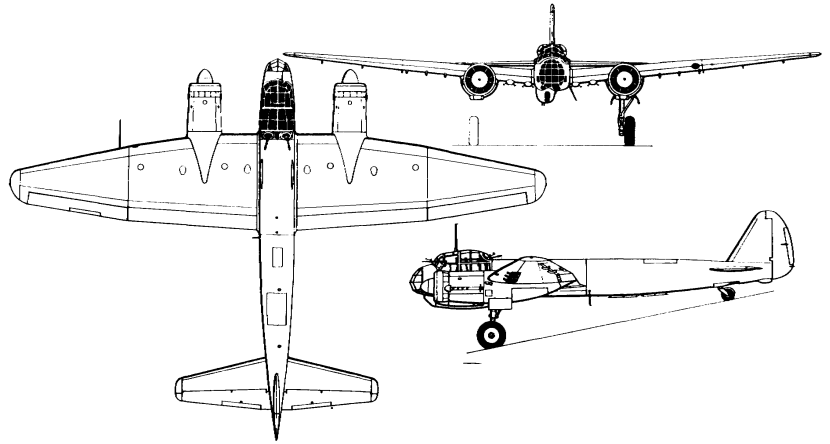
Defense factor: 6 Size Mod: +1
 Damage Factor: 17/26 Endurance: 90
 Cockpit View: Good Blind Area: None

Protection: Cockpit +1 Fuel +2 Engine +0
 Climb Dece/ Dive Accel: 2.0 / 1.0
 Weight and Load Limit: 5500 / 8-16

Wpn Stations	Weight	Allowed Loads
1,3 (PVC rack)	1,700	1 LT F5b torpedo
2 (BB)	1,900	255-gal Aux FT

Country: Germany

Service Entry Date: Oct, 1942



Class: M

Victory Points: 10-20

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(4)	Min HT(5)	Min BT(-)	Min ET(-)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	3.0	6.0	9.0	5.0	6.0	--	--	31-36	VH	300
25-30	HI	3.0	6.5	9.5	4.5	6.0	--	--	25-30	HI	700
19-24	MH	2.5	7.0	9.5	4.0	5.5	--	--	19-24	MH	1,000
13-18	ML	2.5	7.0	9.5	3.5	5.0	--	--	13-18	ML	1,300
7-12	LO	2.5	6.5	9.0	3.0	4.5	--	--	7-12	LO	1,500
1-6	VL	2.0	5.5	8.0	3.0	4.0	--	--	1-6	VL	1,500

FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
FG	One 7.92mm MG81 mg	8	4
FG2	One 13mm MG131 mg	16	3
LG	One 7.92mm MG81 mg	12	4
RG	One 7.92mm MG81 mg	12	4

GUN ATTACK FACTORS

Range	FG1	FG2	LG	RG
0	3/6	9	3	3
1	3/4	7	3	3
2	2/3	5	2	2
3	1/2	3	1	1
4	1/1	2	1	1
5	1/1	1	1	1
6	--	1	--	--
7	--	--	--	--

WEAPON STATION LOCATION



1 2 3

POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	1.0	0.5	--	--	VH
25-30	HI	1.5	0.5	--	--	HI
19-24	MH	2.0	1.0	--	--	MH
13-18	ML	2.5	1.0	--	--	ML
7-12	LO	2.5	1.0	--	--	LO
1-6	VL	2.5	1.0	--	--	VL
Banking FPs		2	3	5	7	
Side Slip FPs		2	4	6	8	

NOTES AND VARIANTS

Defensive Gun Arcs

FG1+: Front, lvl to high (or fixed)
 FG2+: Front, level to low
 LG*: Left rear -30, lvl to high
 RG*: Right rear -30, lvl to high
 + Bombadier fires only 1 gun/turn
 * Radioman fires only 1 gun/turn.

Ju88A-17: Available Oct-42. Torpedo-armed version of the Ju88A-4 equipped to carry two torpedos and torpedo aiming equipment. Used by KG28 over the Med first. No divebrakes.

FG1: FG1 can be locked in a fixed position and fired by the pilot (values to right of slash) or fired by bombardier.

255 gal Aux FT: Wgt: 1350 lbs Ld: 6.0/2.0 End: +50

Junkers Ju88S-1

A/C Type: High Speed Bomber
 Engine(s): Two BMW 801G-2 radials w/GM-1
 Eng. Pwr: 3460-hp, air-cooled
 A/C Crew: Pilot, bombardier/navigator,
 radio-operator/gunner

Maximum Speed: 373 mph @16,405 ft
 Maximum Ceiling: 36,090 / 31,300 / 22,000 ft.

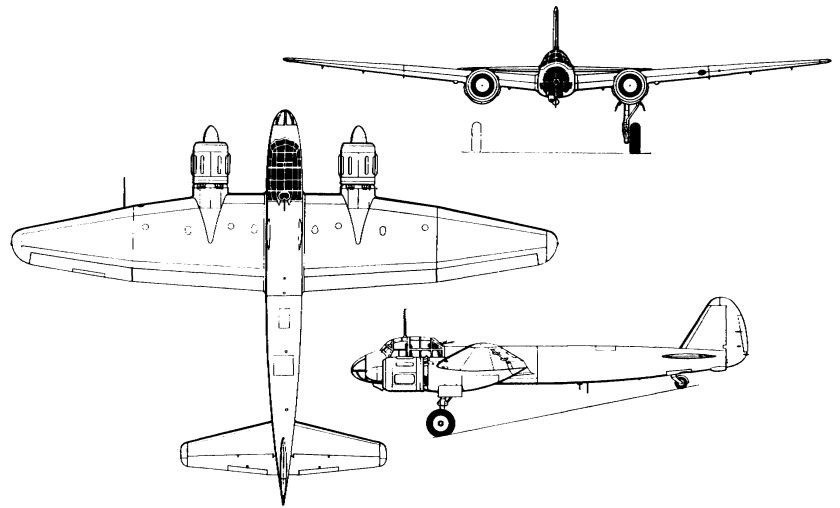
Defense factor: 6 Size Modifier: +1
 Damage Factor: 18/27 Endurance: 140
 Cockpit View: Fair Blind Area: Rear,low

Protection: Cockpit +1 Fuel +1 Engine +0
 Climb Dece/ Dive Accel: 2.0 / 1.0
 Weight and Load Limit: 5,614 / 8-12

Wpn Stations	Weight	Allowed Loads
1, 4	2,200	1x 1000 kg
2, 3 (Bombbays)	1,550	7x SD65 or FT

Country: Germany

Service Entry Date: February, 1944



Class: M

Victory Points: 6-12

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(4)	Min HT(5)	Min BT(-)	Min ET(-)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	(3.5)	(7.0)	(10.5)	5.5	7.0	--	--	37-42	EH	(200)
31-36	VH	3.0	7.0 (7.5)	10.5 (11.0)	5.0	6.5	--	--	31-36	VH	500 (600)
25-30	HI	3.0	7.5 (8.0)	11.0	4.5	6.0	--	--	25-30	HI	900 (1100)
19-24	MH	2.5	7.0	10.5	4.0	5.0	--	--	19-24	MH	1,300
13-18	ML	2.5	7.0	10.0	3.5	4.5	--	--	13-18	ML	1,600
7-12	LO	2.5	6.5	9.5	3.0	4.0	--	--	7-12	LO	1,800
1-6	VL	2.0	6.0	8.5	3.0	3.5	--	--	1-6	VL	1,800

FIRE POWER CHART

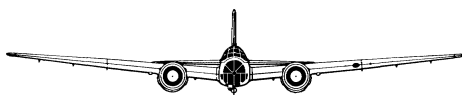
Guns	Type Weapons	Ammo	Criticals
DG	One 13mm MG131 MG	5	3

* See Rule 10.6 for reloading guns in combat.

GUN ATTACK FACTORS

Range	DG
0	6
1	4
2	3
3	1
4	1
5	1
6	1
7	--

WEAPON STATION LOCATION



1 2,3,4 5

POWER VERSUS SPEED CHART

Levels	Bands	per engine)				Band
		1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	2.0/3.0	0.5/1.0	--	--	VH
25-30	HI	2.5/3.5	1.0/2.0	--	--	HI
19-24	MH	3.0/3.5	1.5/2.0	--	--	MH
13-18	ML	3.5/4.0	2/2.5	--	--	ML
7-12	LO	3.5/4.0	2/2.5	--	--	LO
1-6	VL	3.5/4.0	2/2.5	--	--	VL
Banking FPs		2	3	5	7	
Side Slip FPs		2	4	6	8	

NOTES AND VARIANTS

Defensive Gun Arcs

DG: Rear level to High; 6:00 = high only.

Ju88S-1: Available Feb-44. To combat the increasing Allied fighter advantage, Junkers developed a high-speed bomber version of the Ju88, with more streamlining and reduced defenses.

GM-1 Boost: Equipped with the GM-1 Nitrous Oxide boost system. Adds 0.5 to max level speed, +200 roc (values in parentheses), Ceil = 38,000 ft, and 0.5 power/eng HI - EH. Can be used during a combination of 3 Op-scale turns and/or combats (27 minutes).

268-gal Aux FT: **Wgt:** 1400 lb **Ld:** 6.0/2.0 **End:** +110